

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The non-Final Office Action of December 24, 2003 has been received and its contents carefully reviewed.

Claims 7-17 are currently pending. Claims 1-6 have been cancelled.

Claims 7, 9-11, and 15 were rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,851,303 to Hwang et al. ("Hwang"). Claims 8 and 16 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Hwang in view of U.S. Patent No. 4,462,861 to McClean ("McClean"). Claim 12 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Hwang in view of U.S. Patent No. 5,698,503 to Ward ("Ward"). Claim 13 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Hwang in view of U.S. Patent No. 4,220,706 to Spak ("Spak"). Claim 14 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Hwang in view of Korean Patent Application KR 2001077228 to Kim et al. ("Kim").

Claims 7, 9-11, 15 and 17 recite a combination of elements including, for example, "an additive activating an etching action of the hydrogen peroxide" and "applying the solution to etch the molybdenum on the substrate." Hwang fails to teach or suggest at least these elements of claims 7, 9-11, 15 and 17.

Hwang is directed to a method for removing metal surface contaminants from silicon as stated in the Abstract:

A method for removing metal surface contaminants from silicon metalloid. The method comprises sequentially contacting the silicon with gaseous hydrogen fluoride and then with an aqueous solution comprising at least one-half weight percent hydrogen peroxide. The method is especially useful as a means for recovering metal surface contaminants on semiconductor grade silicon for analysis of surface contamination of the silicon by such metals. The method is useful for recovering copper from the surface of semiconductor grade silicon in an aqueous solution which can be analyzed directly to determine the amount of copper contamination of the surface of the silicon.

The metal contaminants are removed in a two step process using gaseous hydrogen fluoride and then an aqueous solution comprising at least one-half weight percent hydrogen peroxide. The use of the aqueous solution allows for an analysis to determine the amount of metal contamination on the silicon. The Examiner identifies nitric acid as an additive in Hwang.

Hwang teaches that the nitric acid “was added to the aqueous solution associated with each silicon sample to reduce the potential for evaporation of removed metals during analysis of the solution by graphite furnace atomic absorption.” (See col. 5, ll. 1-5.) The nitric acid minimizes the evaporation of the removed metals during analysis of the solution.

The solution in Hwang is applied to remove contaminants from the surface of silicon. This is different from etching the molybdenum as required by the present invention. Further, Hwang does not have an additive that activates an etching action of the hydrogen peroxide. First, there is no etching described in Hwang, and second, the nitric acid in Hwang has nothing to do with the removal the metal from the silicon, but rather has to do with preventing the evaporation of the removed metals from the aqueous solution during analysis of the aqueous solution. Therefore, the Applicant believes that claims 7, 9-11, 15 and 17 are allowable over Hwang.

Further, claims 8, 12-14 and 16 which depend on claim 7 are allowable because Hwang in combination with McClean, Spak, Ward, nor Kim do not teach or disclose “an additive activating an etching action of the hydrogen peroxide” and “applying the solution to etch the molybdenum on the substrate” as found in claims 8-17.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner deems that a telephone conference would help expedite the prosecution of this application, the Examiner is requested to call the undersigned attorney at (202) 496-7500. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

Dated:

Respectfully submitted,

By

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